

PATENT COOPERATION TREATY

ENTERED

TNP

From the INTERNATIONAL SEARCHING AUTHORITY

OCT 2 1 2004

STATUS DB-LA

PCT

To:

FAHMI, Tarek N.
12400 Wilshire Boulevard, 7th Floor
Los Angeles CA 90025
UNITED STATES OF AMERICA

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

RECEIVED

Entered in FIP on: 10/21

OCT 18 2004

(PCT Rule 44.1)

Docketing Department

BLAKELY BOKOROFF TAYLOR & ZIMMERMAN LLP
LOS ANGELES

(day/month/year)

14/10/2004

Applicant's or agent's file reference

G317P064PCT

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/US2004/022209

International filing date

(day/month/year)

09/07/2004

Applicant

APPLIED MATERIALS ISRAEL, LTD.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the international searching authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland; Fax No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the international searching authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the international bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated offices.
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of 18 months from the priority date, the international application will be published by the international bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the international bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the international searching authority to the international bureau. The international bureau will send a copy of such comments to all designated offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated offices.

In respect of other designated offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
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Authorized officer

Jacinta Reddy

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6317P064PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below.	
International application No. PCT/US2004/022209	International filing date (day/month/year) 09/07/2004	(Earliest) Priority Date (day/month/year) 11/07/2003
Applicant APPLIED MATERIALS ISRAEL, LTD.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

METHOD OF TRANSMITTING CAD DATA TO A WAFER INSPECTION SYSTEM

BOOKETING REQUIRED
AD

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/022209A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 529 621 B1 (ALLES DAVID S ET AL) 4 March 2003 (2003-03-04) in particular: col. 5, l. 24, to col. 6, l. 7, in combination with figure 1; col. 6, l. 6 to 45, in combination with figure 6; col. 12, l. 39, to col. 13, l. 12, in combination with figure 9 the whole document	1-13
Y	SEBESTA W W ET AL: "Development of a new standard for test" 10 September 1990 (1990-09-10), PROCEEDINGS OF THE INTERNATIONAL TEST CONFERENCE. WASHINGTON, SEPT. 10, PAGE(S) 988-993, XP010033914 ISBN: 0-8186-9064-X in particular the abstract and the section '1 Introduction' the whole document	1-13

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

A document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

30 September 2004

14/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patankaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Lerbinger, K

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/022209

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6529621	B1	04-03-2003	EP 1141868 A2 10-10-2001
			JP 2002532760 T 02-10-2002
			WO 0036525 A2 22-06-2000
			US 2003142860 A1 31-07-2003

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/022209

International filing date (day/month/year)
09.07.2004

Priority date (day/month/year)
11.07.2003

International Patent Classification (IPC) or both national classification and IPC
G06F17/50

Applicant
APPLIED MATERIALS ISRAEL, LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Lerbingner, K

Telephone No. +49 89 2399-2274



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/022209

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/022209

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	1-13
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

Item V

- 1 Reference is made to the following documents:

D1: US 6,529,621 B1

D2: Sebesta, W.W. et al.: "Development of a New Standard for Test", 1990
International Test Conference

- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.
- 2.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1. It discloses (the references in parentheses applying to this document) a computer-implemented process, comprising creating computer aided design information regarding circuitry for an integrated circuit (col. 5, l. 26-28: "... in operation 102, an integrated circuit (IC) device is designed using any suitable design techniques. ... with the aide of any suitable design system, such as conventional computer aided design (CAD) tools"), storing a version of said CAD information in a database accessible by said semiconductor wafer inspection equipment (col. 5, l. 39-41: "... in operation 104 the IC designer generates a circuit pattern database (commonly referred to as a "layout") from the IC design"; col. 5, l. 64 to col. 6, l. 1: "... the circuit pattern base may include flagged portions ... that will be used to inform an inspection system to inspect corresponding portions of the reticle and/or fabricated IC device ...").

The subject-matter of claim 1 therefore differs from this known method in that document D1 does not explicitly disclose that the computer aided design information regarding circuitry for an integrated circuit is *translated* into a format compatible for use with semiconductor inspection equipment, and that the *translated* version of the data is stored.

The problem to be solved by the present invention may therefore be regarded as the incompatibility of the data structures of the CAD system and the semiconductor wafer inspection system.

- 2.2 The solution proposed in claim 1 of the present application cannot be considered

as involving an inventive step (Article 33(3) PCT) for the following reasons.

The problem of data structure incompatibility between different tools is well known in the art, see merely as example document D2 which states in the second phrase of the first paragraph "[t]he transfer of test information from computer aided design (CAD) systems which are used for design, simulation, and test pattern calculation to automatic test equipment (ATE) is widely seen as a complicated and not very straightforward task". As a solution to this problem it suggests to use a data transfer format which is tailored to the test equipment (abstract). This teaching would obviously also apply to semiconductor wafer inspections systems. The teaching of document D2 would therefore suggest to the person skilled in the art that it would be advantageous to use data structure which is tailored to the wafer inspection system, that is a data format which is readable by the wafer inspection system. By this obvious development he would arrive at a method having all the technical features of the independent claim 1.

- 3 Dependent claims 2 to 13 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

These claims basically define the kind of data which are stored and the kind of test equipment which can read the data without however defining any clear technical features of the claimed computer-implemented process.